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Date:

November 23, 2005

By:

Mari Kleineidam

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**PATENT**

Attorney Docket No. GC791-3

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

|                                    |   |                      |
|------------------------------------|---|----------------------|
| In re Application of               | ) | Group Art Unit: 1632 |
|                                    | ) |                      |
| DUAN <i>et al.</i>                 | ) | Examiner: Unassigned |
|                                    | ) |                      |
| Serial No.: 10/798,549             | ) |                      |
|                                    | ) |                      |
| Filed: March 10, 2004              | ) |                      |
|                                    | ) |                      |
| For: Grain Compositions Containing | ) |                      |
| Pre-Biotic Isomalto-               | ) |                      |
| Oligosaccharides and Methods of    | ) |                      |
| Making and Using Same              | ) |                      |

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants submit herewith patents, publications or other information (listed on the attached Form PTO-1449 and attached thereto) of which they are aware, that they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR §1.56.

This Information Disclosure Statement:

(a) ☐ accompanies the new patent application submitted herewith. 37 CFR §1.97(a).

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(b) ☐ is filed within three months after the filing date of the application or within three months after the date of entry into the national stage of a PCT application as set forth in 37 CFR §1.491.

(c) ☒ as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits.

(d) ☐ is filed after the first Office Action and more than three months after the application filing date or PCT national stage date of entry filing but, as far as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and is accompanied by either the fee (\$180.00) set forth in 37 CFR §1.17(p) and a certification as specified in 37 CFR §1.97(e), as checked below. Authorization to charge Deposit Account No. 07-1048 in the amount of \$180.00 to cover the cost of this Information Disclosure Statement is provided in the Transmittal Letter submitted herewith in duplicate.

(e) ☐ is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and is accompanied by authorization (in the Transmittal Letter submitted herewith in duplicate) to charge Deposit Account No. 07-1048 the fee (\$180.00) set forth in 37 CFR §1.17(l)(1) and a certification as specified in 37 CFR §1.97(e), as checked below. **This document is to be considered as a petition requesting consideration of the Supplemental Information Disclosure Statement.**

**[If either of boxes (d) or (e) is checked above, the following "certification" under 37 CFR §1.97(e) must be completed.]** The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

☐ No item of information contained in this Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application and to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

A copy of the items on Form PTO-1449 is supplied: PCT International Search Report for PCT/US04/07781, mailed 27 April 2005 with attached patents and publications.

☒ each ☐ none ☐ only those listed below:

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Filed: March 10, 2004

Those patent(s) or publication(s) which are marked with an asterisk (\*) on the attached Form PTO-1449 are not supplied because they were previously cited by or submitted to the Office in a prior application, Serial No. \_\_\_\_\_ filed \_\_\_\_\_, and relied upon in this application for an earlier filing date under 35 USC 120.

Those patent(s) or publication(s) which are marked with an asterisk (\*\*) on the attached Form PTO-1449 (**Books not sent**) are not supplied. Complete bibliographic information is unknown or unavailable. The cited publications are books or reference manuals and are commonly available. Reproduction of such publications would result in a voluminous submission.

A concise explanation of relevance of the items listed on PTO-1449 is:

- ☒ not given
- ☐ given for each listed item
- ☐ given for only non-English language listed item(s)
- ☐ in the form of an English language copy of a Search Report from a foreign patent office, issued in a counterpart application, which refers to the relevant portions of the references.

The Examiner is reminded that a "concise explanation of the relevance" of the submitted prior art "may be nothing more than identification of the particular figure or paragraph of the patent or publication which has some relation to the claimed invention." MPEP §609.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR §1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR §1.97(b), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as

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Filed: March 10, 2004

defined in 37 CFR §1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR §1.98 and MPEP §609 and the Examiner is respectfully requested to consider the listed references.

Respectfully submitted,

Dated: Nov 23, 2005

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# INFORMATION DISCLOSURE CITATION

|                                |  |
|--------------------------------|--|
| Attorney Docket No.: GC791-3   | Serial No.: 10/798,549                     |
| Applicant: Duan, <i>et al.</i> |  |
| Filing Date: March 10, 2004    | Group: 1632                                |
| Page 1 of 4                    | Date of this Submission: November 23, 2005 |

## US PATENT DOCUMENTS

| Examiner's<br>Initials | Document<br>Number | Date     | Name                  | Class | Sub-<br>Class | Filing<br>Date |
|------------------------|--------------------|----------|-----------------------|-------|---------------|----------------|
|                        | 3,922,196          | 11-25-75 | Leach et al.          | 195   | 31 R          | 10-08-74       |
|                        | 4,113,509          | 09-12-78 | Leach et al.          | 127   | 29            | 09-09-76       |
|                        | 4,575,487          | 03-11-86 | Shetty et al.         | 435   | 15            | 05-25-83       |
|                        | 4,647,538          | 03-03-87 | Zeikus et al.         | 435   | 201           | 09-18-84       |
|                        | 4,970,158          | 11-13-90 | Outtrup et al.        | 435   | 201           | 02-17-87       |
|                        | 4,981,687          | 01-01-91 | Fregly et al.         | 424   | 439           | 07-17-89       |
|                        | 5,096,894          | 03-17-92 | Tao et al.            | 514   | 58            | 04-03-90       |
|                        | 5,141,859          | 08-25-92 | Niimi et al.          | 435   | 100           | 10-24-89       |
|                        | 5,733,579          | 03-31-98 | Wolf et al.           | 424   | 606           | 14-05-95       |
|                        | 5,759,610          | 06-02-98 | Nishimoto et al.      | 426   | 658           | 03-12-97       |
|                        | 5,763,385          | 06-09-98 | Bott et al.           | 510   | 392           | 05-14-96       |
|                        | 5,824,532          | 10-20-98 | Barnett et al.        | 435   | 202           | 06-06-95       |
|                        | 5,958,739          | 09-28-99 | Mitchinson et al.     | 435   | 99            | 02-20-97       |
|                        | 6,008,026          | 12-28-99 | Day                   | 435   | 96            | 07-11-97       |
|                        | 6,013,299          | 01-11-00 | Haynes et al.         | 426   | 549           | 11-04-97       |
|                        | 6,168,821          | 01-02-01 | Castleberry           | 426   | 590           | 11-12-99       |
|                        | 6,361,809          | 03-26-02 | Christophersen et al. | 426   | 52            | 04-09-96       |
|                        | 6,492,576          | 12-10-02 | Kihara et al.         | 800   | 260           | 06-26-98       |

|          |                 |
|----------|-----------------|
| Examiner | Date Considered |
|          |                 |

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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| <b>Page 2 of 4</b>                    | <b>Date of this Submission:</b> November 23, 2005 |

## **FOREIGN PATENT DOCUMENTS**

| Examiner's<br>Initials | Document<br>Number | Date     | Country | Class | Sub-<br>Class | Translation |
|------------------------|--------------------|----------|---------|-------|---------------|-------------|
|                        |                    |          |         |       |               | Yes/No      |
|                        | 0 350 737 A2       | 17.01.90 | EPO     |       |               |             |
|                        | EP 0 905 256 A1    | 31.03.99 | EPO     |       |               |             |
|                        | WO 02/20712 A1     | 14.03.02 | PCT     |       |               |             |

## **OTHER DOCUMENTS**

| Examiner's<br>Initials | Author, Title, Date, Pertinent Pages, etc.   |
|------------------------|--|
|                        | International Search Report for PCT/US03/28438 mailed 27 April 2005.   |
|                        | **Alexopoulos, C. J., (1962), Introductory Mycology, New York:Wiley.   |
|                        | Benson, Colm P. et al., "Production and Quantification of Transglucosidase from <i>Aspergillus niger</i> ," <i>J. Chem. Tech. Biotechnol.</i> , 32:790-798, 1982.  |
|                        | Bradford, Marion M., "A Rapid and Sensitive Method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," <i>Analytical Biochemistry</i> , 72:248-254, 1976. |
|                        | Faigh, Jilane et al., "Production of Maltose, High Maltose & Very High Maltose Syrups," Technical Bulletin, Genencor International Inc., 2002.   |
|                        | Gibson, Glenn R. et al., "Dietary Modulation of the Human Colonic Microbiota: Introducing the Concept of Prebiotics," <i>J. Nutr.</i> , 125:1401-1412, 1994.   |
|                        | Hiromi, Keitaro et al., "Subsite Affinities of Glucoamylase: Examination of the Validity of the Subsite Theory," <i>Biochimica et Biophysica Acta</i> , 302:362-375, 1973.                                     |
|                        | Innis, M. A. et al., "Expression, Glycosylation, and Secretion of an <i>Aspergillus</i> Glucoamylase by <i>Saccharomyces cerevisiae</i> ," <i>Science</i> , 228:21-26, 1985.                                   |
|                        | Kaneko, Toshiyuki et al., "Digestibility of Isomaltooligosaccharides by Rats and Effects on Serum Lipids," <i>Nippon Nogeikagaku Kaishi</i> , 66(8):1211-1220, 1992.   |
| <b>Examiner</b>        | <b>Date Considered</b>   |
|                        |  |

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| Page 3 of 4                  | Date of this Submission: November 23, 2005 |

## OTHER DOCUMENTS

| Examiner's Initials   | Author, Title, Date, Pertinent Pages, etc.   |
|---|--|
|   | Kelly, C. T. et al., "Microbial $\alpha$ -Glucosidases," <i>Process Biochemistry</i> , May/June, pp. 6-12, 1983.   |
|   | Kohmoto, Takanobu et al., "Effect of Isomalto-oligosaccharides on Human Fecal Flora," <i>Bifidobacteria Microflora</i> , 7(2):61-69, 1988.   |
|   | Kohmoto, Takanobu et al., "Metabolism of $^{13}\text{C}$ -Isomaltooligosaccharides in Healthy Men," <i>Biosci. Biotech. Biochem.</i> , 56(6):937-940, 1992.  |
|   | Manjunath, P. et al., "Fungal Glucoamylases," <i>Journal of Applied Biochemistry</i> , 5: 235-260, 1983.   |
|   | McCleary, Barry V. et al., "Purification, Properties, and Industrial Significance of Transglucosidase from <i>Aspergillus niger</i> ," <i>Carbohydrate Research</i> , 185:147-162, 1989.                       |
|   | Meagher, Michael, et al., "Subsite Mapping of <i>Aspergillus niger</i> Glucoamylases I and II with Malto- and Isomaltooligosaccharides," <i>Biotechnology and Bioengineering</i> , 34:681-688, 1989.           |
|   | Modler, H. W., "Compounds Which Enhance the Growth of Probiotic Bacteria," presented at the International Roundtable on Animal Feed Biotechnology, Ottawa, Ontario, Canada, 1992.                              |
|   | Ooshima, Takashi et al., "The Caries Inhibitory Effects of GOS-Sugar <i>in vitro</i> and in Rat Experiments," <i>Microbiol. Immunol.</i> , 32(11):1093-1105, 1988.   |
|   | Park, Jong-Hyun et al., "Growth Effect of Branched Oligosaccharides on Principal Intestinal Bacteria," <i>Kor. J. Appl. Microbiol. Biotechnol.</i> , 20(3) :237-242, 1992.                                     |
|   | Pazur, John H., et al., "The Hydrolysis of $\alpha$ -D-Glucosides by Amyloglucosidase from <i>Aspergillus niger</i> ," <i>The Journal of Biological Chemistry</i> , 237(4):1002-1006, 1962.                    |
|   | Pazur, John H. et al., "The Synthesis of 1,6-Anhydro- $\beta$ -D-Glucopyranose and D-Glucosyl Oligosaccharides From Maltose by a Fungal Glucosyltransferase," <i>Carbohydrate Research</i> , 61:279-290, 1978. |
| Examiner  | Date Considered  |
|   |  |
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| Page 4 of 4                    | Date of this Submission: November 23, 2005 |

## OTHER DOCUMENTS

|  |   |  |
|--|---|--|
| Examiner's Initials  | Author, Title, Date, Pertinent Pages, etc.  |  |
|  | Shetty, J. K. et al., Transglucosylation of Malto-oligosaccharides." Paper presented at 50 <sup>th</sup> Starch Convention, Detmold, Germany.   |  |
|  | Suzuki, Yuzuru et al., "Assignment of a <i>p</i> -Nitrophenyl $\alpha$ -D-Glucopyranosidase of <i>Bacillus Stearothermophilus</i> ATCC 12016 to a Novel Exo- $\alpha$ -1,4-Glucosidase Active for Oligomaltosaccharides and $\alpha$ -Glucans," <i>Biochimica et Biophysica Acta</i> , 787:281-289, 1984. |  |
|  | Swinkels, J. J. M., "Sources of Starch, Its Chemistry and Physics," Starch Conversion Technology (Marcel Dekker, Inc., New York, New York, pp.15-46 (1985).   |  |
|  | Tomasik, Prezemyslaw Jan et al., "Probiotics and Prebiotics," <i>Cereal Chem.</i> , 80(2):113-117, 2003.  |  |
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